

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.

What Is Claimed Is:

1. A real time remote monitoring system using an ADSL modem in a reverse direction, comprising:

5 monitoring means for monitoring an object facility to be monitored;

remotely monitored data processing means for monitoring motions according to each channel with respect to the monitored data obtained by the monitoring means so as to be
10 compression-encoded and transmitted in a bit stream, and generating detection signals with respect to the monitored data that have been detected;

first ADSL modulating/demodulating means installed in a reverse direction for modulating the data inputted from the
15 remotely monitored data processing means so as to be upwardly transmitted to a network in a transmission velocity higher than that of the downward channel, and demodulating the data transferred from the network in a transmission velocity lower than that of the upward channel so as to be transferred to the
20 remotely monitored data processing means;

second ADSL modulating/demodulating means installed in a reverse direction for demodulating the data transferred from the first ADSL modulating/demodulating means in a transmission velocity higher than that of the downward channel so as to be
25 transferred to a receiving party, and modulating the data transferred from the receiving party so as to downwardly transferred to the first ADSL modulating/demodulating means in

a transmission velocity lower than that of the upward channel.

2. The real time remote monitoring system as recited in claim 1, further comprising telephone modulating/demodulating means connected to the object facility to be monitored and the first ADSL modulating/demodulating means for modulating/demodulating transaction data transmitted/received between the object facility to be monitored and a device of the receiving party.

3. The real time remote monitoring system as recited in claim 1, wherein the transaction data is transmitted/received between the object facility and the device of the receiving party through either one of the upward/downward channels.

4. The real time remote monitoring system of claim 1, wherein either one of the upward/downward channels is used as an exclusive Internet line, and the other channel as a monitoring channel.

5. The real time remote monitoring system as recited in claim 1, further comprising warning means for warning illegal users of the object facility under a control from the receiving party by using either one of the upward/downward channels as a control channel.

6. The real time remote monitoring system as recited in

claim 5, wherein the monitoring means includes a plurality of monitoring cameras for obtaining monitored image data by photographing the object facility to be monitored.

5 7. The real time remote monitoring system as recited in claim 6, wherein the monitoring means further includes a microphone for obtaining monitored audio data with respect to surroundings of the object facility to be monitored.

10 8. The real time remote monitoring system as recited in claim 5, wherein the remotely monitored data processing means includes:

storing means for storing inputted video data;

15 motion estimation and compensation means for removing chronological redundancy;

clock generating means for generating diverse clocks;

motion detecting means for detecting motions by receiving a motion vector outputted from the motion estimation and compensation section and the clock generating means; and

20 controlling and encoding means for controlling and encoding the video data.

25 9. The real time remote monitoring system as recited in claim 8, wherein the motion detecting means detects motions by using the motion vector size outputted from the motion estimation and compensation means, and detects location of motions by using locational information on macro blocks.

10. The real time remote monitoring system as recited in claim 8, wherein the motion detecting means includes:

5 a motion detecting section for detecting motions by using the motion vector size outputted from the motion estimation and compensation means, and outputting motion a detection signal;

a horizontal location detecting section for obtaining a horizontal location within one macro block;

10 a vertical location detecting section for obtaining a vertical location within one macro block;

15 a first detecting section for detecting motions in each channel on a separate basis by performing an AND for signals outputted from the motion detecting section, the horizontal location detecting section and the vertical location detecting section; and

a second detecting section for detecting motions in the entire channels by performing an OR for each signal outputted from the first detecting section.

20 11. A real time remote monitoring method using an ADSL modem in a reverse direction, comprising the steps of:

a) obtaining monitored data by monitoring an object facility to be monitored;

25 b) detecting motions according to each channel with respect to the monitored data that have been obtained, compression-encoding the monitored data in a bit stream so as to be transmitted, and generating detection signals with

respect to each of the monitored data that has been detected;
and

5 c) modulating the monitored data and the detection signals by using an ADSL modem installed in a reverse direction in a transmission velocity higher than that of the downward channel so as to be transmitted to a network, and demodulating the data transferred from the network in a transmission velocity lower than that of the upward channel so as to perform a remote monitoring.

10

12. The real time remote monitoring method as recited in claim 11, wherein the motion detection in the step b) includes the steps of:

15 b1) obtaining a motion vector size outputted from a motion estimation and compensation section;

b2) confirming whether or not the obtained motion vector size is greater than a predetermined critical value;

20 b3) obtaining a horizontal location of the motion by comparing counter coefficients of a horizontal counter, and obtaining a vertical location of the motion by comparing counter coefficients of a vertical counter; and

b4) detecting existence of a motion in each channel on a separate basis, and outputting a result thereof.